

**REMARKS**

Applicant respectfully requests the Examiner to reconsider the present application in view of the foregoing amendments to the claims.

Claims 1-12 are pending in the present application. Claims 1, 4, 7 and 10 have been amended. No new matter has been added by way of these amendments because each amendment is supported by the present specification. For example, the amendment to claim 1 is editorial in nature and supported by the present specification in the paragraph bridging pages 8-9. The amendments to claims 4, 7 and 10 are also editorial in nature. Thus, no new matter has been added.

Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicant respectfully requests that the Examiner withdraw all objections and rejections and allow the currently pending claims.

**Claim Objections**

Claims 1, 7 and 10 are objected to because of informalities occurring therein. Applicant respectfully traverses because each of the informalities set forth in the Office Action have been addressed by way of the amendments herein. Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this objection.

**Issues Under 35 U.S.C. § 103(a)**

Claims 1-5, 7-9 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 93/24685 (hereinafter "WO '685"). Also, claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable

over WO '685 in view of Hawley (*Condensed Chemical Dictionary*; hereinafter "Hawley") and Barkowsky et al. (U.S. Patent 5,744,523; hereinafter "Barkowsky '523"). In addition, claims 9 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over WO '685 in view of Ito et al. (U.S. Patent 5,913,311; hereinafter "Ito '311"). Applicant respectfully traverses, and reconsideration and withdrawal thereof are respectfully requested.

#### The Present Invention

The present invention is directed to a cellulose acetate structure for a better tobacco filter and having improved biodegradability. Specifically, the present invention is directed to a cellulose acetate structure, wherein at least a surface region of it comprises a biodegradable cellulose acetate composition. The biodegradable cellulose acetate composition comprises a biodegradation promoting agent contained in cellulose acetate, and at least one compound selected from the group consisting of an ester of an oxygen acid of phosphorus, a salt thereof, carbonic acid and a salt thereof.

Applicant submits that *prima facie* cases of obviousness have not been formed with regard to the WO '685 reference, or a combination of WO '685 and the cited secondary references.

#### Distinctions over WO '685, the Combination of WO '685, Hawley and Barkowsky '523, and the Combination of WO '685 and Ito '311

The WO '685 reference is directed to certain cellulose ester fibers having an intermediate degree of substitution (see Abstract; page 1). Also, WO '685 discloses mixing a photoactive pigment, such as

titanium dioxide, into cellulose acetate, together with a thermooxidation augmentation metal salt (page 14, page 15).

However, WO '685 fails to disclose the use of an ester of an oxygen acid of phosphorus or a salt thereof as a photodegradation promoting agent for cellulose acetate. Further, the WO '685 reference fails to disclose a carbonic acid and a salt thereof as a photodegradation promoting agent for cellulose acetate.

Also, the other cited references fail to account for the deficiencies of WO '685 because the secondary references do not describe the use of an ester of an oxygen acid of phosphorus or a salt thereof, carbonic acid and a salt thereof as a photodegradation promoting agent for cellulose acetate either. Thus, the cited WO '685 reference fails to disclose all features as instantly claimed, even when combined with any of the secondary references, and Applicant respectfully submits that all rejections under § 103(a) are overcome.

U.S. case law squarely holds that a proper obviousness inquiry requires consideration of three factors:

- the prior art reference (or references when combined) must teach or suggest all the claim limitations;
- whether or not the prior art would have taught, motivated, or suggested to those of ordinary skill in the art that they should make the claimed invention (or practice the invention in case of a claimed method or process); and
- whether the prior art establishes that in making the claimed invention (or practicing the invention in case of a claimed method or process), there would have been a reasonable expectation of success.

See *In re Vaeck*, 947 F.2d, 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); see also *In re Kotzab*, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000); *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). Here, the first requirement of disclosure of claimed features has not been satisfied, and these rejections have been overcome.

Applicant further submits that the cited Hawley, Barkowsky '523 and Ito '311 references fail to account for the deficiencies of the primary WO '685 reference.

The Hawley reference is used to disclose features of calcium phosphate, tribasic (wherein claim 6 of the present invention is directed to the biodegradation promoting agent being in the form of fine particles) (see Office Action at page 4). Column 1, lines 9-18 of the Barkowsky '523 reference is used to disclose dispersing finely divided solids in organic media in the presence of a dispersing agent (Office Action, page 4). However, neither Hawley nor Barkowsky '523 accounts for the deficiencies of the WO '685 reference.

The Ito '311 reference is directed to a filter material having cellulose acetate fiber tow (see Abstract), wherein the Office Action refers to Col. 7, lines 52-53 (see Office Action at page 5). Again, Applicant respectfully submits that the secondary Ito '311 reference accounts for the deficiencies of WO '685.

Thus, Applicant submits that a *prima facie* case of obviousness has not been formed with regard to any combination of WO '685, Hawley, Barkowsky '523, and/or Ito '311 because there is no disclosure of all claimed features.

In addition, Applicant respectfully submits that the other requirements for a *prima facie* case of obviousness have not been satisfied as well.

There are three possible sources of motivation to combine references: the nature of the problem to be solved, the teaching of the prior art, and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). Here, one of ordinary skill in the art would not modify WO '685, or combine WO '685 with any of the cited references.

For example, WO '685 already lacks disclosure of all claimed features. There is no disclosure in WO '685 for one of ordinary skill in the art to properly modify this reference in order to achieve the present invention.

As another example, the Barkowsky '523 and WO '685 references are not within an analogous art. *In re Oetiker*, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). Instead, Barkowsky '523 is directed to lacquers, paints and plastics (see Col. 1, lines 31-33; Col. 2, line 20; Col. 6, lines 28-31). Thus, Applicant respectfully submits that one of ordinary skill in the art, upon reading WO '685, which is directed to cellulose ester fibers, would not refer to the Barkowsky '523 reference, which is directed to lacquers, paints and plastics, in order to achieve the present invention.

Based on the above remarks, Applicants respectfully submit that a *prima facie* case of obviousness has not been formed with respect to the WO '685 reference, the asserted combination of WO '685, Hawley and Barkowsky '523, and the asserted combination of WO '685 and Ito '311, because not all requirements for a *prima facie* case of obviousness

have been satisfied. Accordingly, Applicant respectfully requests the Examiner to reconsider, and to withdraw all rejections and the objection and allow the currently pending claims.

A full and complete response has been made to the Office Action. The Examiner is respectfully requested to pass the application to issue.

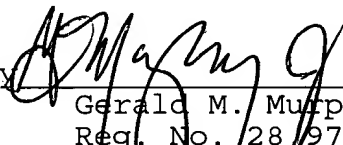
Pursuant to 37 C.F.R. § 1.17 and 1.136(a), Applicants respectfully petition for a two (2) month extension of time for filing a response in connection with the present application. The required fee of \$410.00 is attached hereto.

**Attached hereto is a marked-up version of the changes made to the application by this Amendment.**

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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**MARKED-UP VERSION SHOWING CHANGES MADE**

**IN THE CLAIMS:**

The claims have been amended as follows:

1. (Amended) A cellulose acetate structure, at least a surface region of which comprises a biodegradable cellulose acetate composition comprising a biodegradation promoting agent contained in cellulose acetate and comprising at least one compound selected from the group consisting of [a salt of an oxygen acid of phosphorus,] an ester of an oxygen acid of phosphorus, [or] a salt [thereof,] of an ester of an oxygen acid of phosphorous, carbonic acid and a salt [thereof.] of carbonic acid.

4. (Amended) The cellulose acetate structure according to claim 3, wherein said biodegradation promoting agent is selected from the group consisting of cellulose [phosphate, starch phosphate, calcium secondary phosphate, calcium tertiary phosphate, and calcium phosphate hydroxide.] phosphate and starch phosphate.

7. (Amended) The cellulose acetate structure according to claim 1, further comprising a [phtodegradation] photodegradation promoting agent.

10. (Amended) The cellulose acetate structure according to claim 1, wherein said cellulose acetate structure is in the form of [a] an unwoven fabric formed of short fibers having a length of 1 to 100 mm.